

FILE 'HCAPLUS' ENTERED AT 11:18:09 ON 26 JUL 2002

L1 (735)SEA ABB=ON (C OR CAJANUS) (W)CAJAN
 L2 (48)SEA ABB=ON L1(5A) (LEAVES OR LEAF?)
 L3 11 SEA ABB=ON L2 AND (HEAL? OR PHARM? OR MEDICIN? OR THERAP? OR
 TREAT?)
 L7 (2)SEA ABB=ON (C OR CAJANUS) (W)CAJAN(5A) (LEAVES OR LEAF) AND
 DRUG
 L8 1 SEA ABB=ON L7 NOT L6

 L9 12 SEA ABB=ON L3 OR L8

=> d ibib abs 1-12

L9 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 2002:142503 HCAPLUS
 DOCUMENT NUMBER: 136:177988
 TITLE: Compositions containing hypotriglyceridemic active
 stilbenoids
 INVENTOR(S): Inman, Wayne D.; Hoppe, David Craig
 PATENT ASSIGNEE(S): USA
 SOURCE: PCT Int. Appl., 53 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002013809	A2	20020221	WO 2001-US41728	20010815
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2002058708	A1	20020516	US 2001-919995	20010802
PRIORITY APPLN. INFO.:			US 2000-225704P	P 20000816
			US 2001-919995	A 20010802

OTHER SOURCE(S): MARPAT 136:177988
 AB The use of isolated or purified stilbenoid compds. including longistyline
 A 2-carboxylic acid as a dietary supplement to mammals suffering from
 elevated triglyceride levels is described. The invention also relates to
 the use of such stilbenoid compds. in combination with other
 hypotriglyceridemic agents. For example, a solvent extn. method was used
 for isolation of longistyline A 2-carboxylic acid from **Cajanus**
cajan leaves. Longistyline A 2-carboxylic acid was
 effective in reducing serum triglyceride levels in fat fed, streptozocin-
 treated rats, i.e., an art recognized model of
 hypertriglyceridemia.

L9 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 2001:633862 HCAPLUS
 DOCUMENT NUMBER: 135:288146
 TITLE: Effects of fertilizer with different mineral
 composition on the absorption of Ca, Cu, K, Mg, Mn, Na

AUTHOR(S): and V, by two cultivars of pigeonpea (*Cajanus cajan*, Millsp)
 Piasentin, R. M.; Armelin, M. J. A.; Primavesi, O.; Saiki, M.

CORPORATE SOURCE: Radiochemistry Division, Instituto de Pesquisas Energeticas e Nucleares IPEN-CNEN/SP, Sao Paulo, CEP 05422-970, Brazil

SOURCE: Journal of Radioanalytical and Nuclear Chemistry (2001), 249(1), 83-87
 CODEN: JRNCDM; ISSN: 0236-5731

PUBLISHER: Kluwer Academic Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Leaf samples of two cultivars of *Cajanus cajan* were analyzed by instrumental neutron activation anal. (INAA). The samples came from plants **treated** with two doses of fertilizer contg. each of the following elements: B, Co, Cu, Fe, Mn, Mo, V and Zn, which were applied, individually, to the soil. The leaf samples were obtained at two different times. The effect of each fertilizer, the dose and leaf harvest time, on the concns. of Ca, Cu, K, Mg, Mn, Na and V, and the behavior of both cultivars in relation to the concns. of these elements was studied.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 12 HCPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 2001:318306 HCPLUS
 DOCUMENT NUMBER: 134:336975

TITLE: Cadmium-induced changes in leaf epidermis, photosynthetic rate and pigment concentrations in *Cajanus cajan*

AUTHOR(S): Khudsar, T.; Mahmooduzzafar; Iqbal, M.

CORPORATE SOURCE: Department of Botany, Jamia Hamdard, New Delhi, 110 062, India

SOURCE: Biologia Plantarum (2001), 44(1), 59-64
 CODEN: BPABAJ; ISSN: 0006-3134

PUBLISHER: Institute of Experimental Botany, Academy of Sciences of the Czech Republic

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Application of different concns. of Cd [5, 10, 15, 25, and 50 .mu.g(CdCl₂) g⁻¹(soil d.m.)] markedly affected **leaves** of *Cajanus cajan*. Due to increased Cd content in leaves, stomatal d. and size on abaxial epidermis, and the size of stomatal aperture and length and d. of trichomes on both leaf epidermis decreased in the **treated** plants. Net photosynthetic rate and stomatal conductance were reduced at each concn. of Cd, whereas redn. in intercellular CO₂ concn. was at 10 .mu.g Cd onwards. The contents of chlorophyll a, chlorophyll b and carotenoids were relatively low during early stages of plant development under the effect of Cd. Nitrate content, nitrate reductase activity and protein content were also lower in **treated** plants, compared with control.

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 12 HCPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 2000:909307 HCPLUS
 TITLE: The leaves of *cajanus* *cajan*(l.) millsp and extract, formulation and uses thereof

INVENTOR(S): Yuan, Hao
 PATENT ASSIGNEE(S): Peop. Rep. China
 SOURCE: PCT Int. Appl.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Chinese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000078324	A1	20001228	WO 2000-CN164	20000619
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1190716	A1	20020327	EP 2000-951187	20000619
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRIORITY APPLN. INFO.:			CN 1999-109147	A 19990618
			CN 1999-109886	A 19990720
			WO 2000-CN164	W 20000619

AB The invention discloses an extract of the **leaves** of **Cajanus Cajan**(L.) Millsp and a process for the preparation of them. The invention also discloses the new uses of the **leaves of Cajanus Cajan**(L.) Millsp and their extract, i.e. the uses for the preparation of medicaments for the **treatment** of ischemic necrosis of caput femoris and osteoporosis, for improvement index of hemorheology, for anti-inflammatory and analagecization, for enhancement immune function and for the **treatment** of coronary heart disease angina, fracture, cerebral infarction, decubitus, infectious wound and infectious wound of open fracture.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 5 OF 12 HCPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 2000:841715 HCPLUS
 DOCUMENT NUMBER: 134:142967
 TITLE: Morphological and anatomical variations of **Cajanus cajan** (Linn.) Huth raised in cadmium-rich soil
 AUTHOR(S): Khudsar, Tarannum; Mahmooduzzafar; Soh, Woong Young; Iqbal, Muhammad
 CORPORATE SOURCE: Department of Botany, Hamdard University, New Delhi, 110 062, India
 SOURCE: Journal of Plant Biology (2000), 43(3), 149-157
 CODEN: JPBIEZ; ISSN: 1226-9239
 PUBLISHER: Botanical Society of Korea
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Different concns. of cadmium in the growing media affected morphol. parameters of *C. cajan*. Over time, the amt. of increase in shoot and root lengths, no. of branches and leaves per plant, single and total leaf areas, and dry mass of leaves was significantly lower for **treated** plants compared with controls. The root-shoot length ratio, which varied

little over time, was relatively low for the **treated** plants. Although dry mass of both stems and roots increased, the rates were considerably low under Cd stress. The root-shoot dry mass ratio in the controls was highest during flowering and lowest in the post-flowering stage but continually declined over time for the stressed plants. Compared with the controls, **treated** plants had fewer pods, with the no. decreasing as the Cd concn. increased. Cd content was greater in roots than in stems or leaves, and leaves had greater amts. than did stems at higher doses. For all plants, the width and d. of vessel elements and the length of fibers in the wood of stems and roots increased with plant age. However, the rate of increase was generally lower in the **treated** plants, the difference being more pronounced with higher doses of Cd. This indicated a reduced ascent of sap and, hence, less available water for tissues in **treated** plants.

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 6 OF 12 HCPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:838200 HCPLUS

DOCUMENT NUMBER: 123:248707

TITLE: Effects of the application of cement kiln exhausts on leaf biochemistry in certain legume crops

AUTHOR(S): Saralabai, V.C.; Vivekanandan, M.

CORPORATE SOURCE: School of Life Sciences, Bharathidasan University, Tiruchirapalli, 620 024, India

SOURCE: Photosynthetica (1995), Volume Date 1995, 31(3), 399-409

CODEN: PHSYB5; ISSN: 0300-3604

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Application of the electrostatic precipitator (ESP) dust to soil and leaves of **Cajanus cajan**, Vigna mungo, Vigna radiata, Vigna catjang and Glycina max increased biomass, chloroplast pigments, chem. constituents and enzyme activities of leaves, besides crop productivity evidently indicating that the dust acted as a fertilizer.

The net photosynthetic rate, photosystem 2 activity and rate of transpiration were not altered in spite of the dust forming a thin uniform coating over the leaf surface. The contents of intermediary N-compds. like allantoin, allantoic acid and total ureides of the leaves, which might serve as an indirect evidence of symbiotic N₂-fixation, were higher in the **treated** plants. There were increments in free proline, sol. proteins, total nitrogen, nitrates, nitrites, sol. sugars and phenols in the **treated** plants. The concns. of free amino acids, sol.

starch, total sucrose and water sol. SH compds. of the leaves of the control and **treated** plants did not show any significant difference. The activity of superoxide dismutase was significantly higher which possibly indicated its role in alleviation of H₂O₂ and O₂⁻ toxicity.

Enzymes like nitrate reductase, nitrite reductase, glutamine synthetase, acid and alk. phosphatases, carbonic anhydrase, catalase, glutathione reductase and ascorbate peroxidase also functioned normally. In the **treated** plants, the concn. of ascorbic acid was significantly higher in the roots and nodules indicating the possible role of ascorbic acid in stress alleviation.

L9 ANSWER 7 OF 12 HCPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1991:577016 HCPLUS

DOCUMENT NUMBER: 115:177016

TITLE: Photosynthetic carbon fixation, translocation and metabolite levels in pigeon pea (**Cajanus cajan** L.) leaves exposed to excess

AUTHOR(S): cadmium
 Sheoran, I. S.; Gupta, V. K.; Laura, J. S.; Singh, Randhir
 CORPORATE SOURCE: Dep. Chem. Biochem., Haryana Agric. Univ., Hisar, 125 004, India
 SOURCE: Indian J. Exp. Biol. (1991), 29(9), 857-61
 CODEN: IJEBAA; ISSN: 0019-5189
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Application of Cd²⁺ to pigeon pea plants through rooting medium at vegetative stage resulted in decreased carbon fixation. Assimilate transport from the leaf increased with the application of 3 mM Cd²⁺ at both the samplings (1 and 4 days after treatment). However, higher concn. (6 mM) drastically reduced assimilate transport on day 4 after treatment. Level of total sol. carbohydrates and starch was not affected much by Cd²⁺ treatment. However, sucrose level was reduced at both the samplings. The redns. in sucrose correlated well with the decreased activity of sucrose phosphate synthase. Carbon partitioning between starch and sucrose was not affected by Cd²⁺, but sucrose biosynthesis was quite sensitive.

L9 ANSWER 8 OF 12 HCPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 1984:420743 HCPLUS
 DOCUMENT NUMBER: 101:20743
 TITLE: Influence of potassium nutrition on stomatal behavior, transpiration rate and leaf water potential of pigeon pea (*Cajanus cajan* (L.) Millsp.) in sand culture
 AUTHOR(S): Rao, K. Venkateswara; Rao, K. V. Madhava
 CORPORATE SOURCE: Dep. Bot., Andhra Univ., Waltair, 530 003, India
 SOURCE: Proc. - Indian Acad. Sci., Plant Sci. (1983), 92(4), 323-30
 CODEN: PIPLD; ISSN: 0253-410X
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Pigeon pea seedlings were grown in sand culture with Hoagland's soln. at 4 K levels (0, 117.5, 235.0, and 352.5 mg/L), and measurements were conducted with 1toreq.37-day-old seedlings. K accumulated in guard cells during stomatal opening. Stomatal aperture was small in K-deficient plants as compared to K-treated ones. The transpiration rate was lower in K-deficient plants than in K treatments; however, transpiration decreased with age in all treatments. K deficiency increased leaf water potential which may be due to the reduced stomatal aperture and transpiration. The influence of K on stomatal frequency was apparently correlated with leaf area at all stages of development.

L9 ANSWER 9 OF 12 HCPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 1982:612858 HCPLUS
 DOCUMENT NUMBER: 97:212858
 TITLE: Effect of gibberellic acid and (2-chloroethyl)trimethylammonium chloride on leaf development of pigeon pea (*Cajanus cajan* (L.) Millsp.)
 AUTHOR(S): Rao, P. F. Raja; Rao, K. V. Madhava
 CORPORATE SOURCE: Dep. Bot., S. V. Univ., Tirupati, 517 502, India
 SOURCE: Indian J. Plant Physiol. (1981), 24(4), 394-400
 CODEN: IPPYA2; ISSN: 0019-5502
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The effect of gibberellic acid (GA), 70 ppm, and CCC, 500 and 1000 ppm, on the physiol. of the developing first leaf of pigeon pea was studied. GA, and the higher concn. of CCC reduced the levels of protein synthesis and consequently dry wt. Lower proteinase activity was evident in the GA-treated leaves during early stages of leaf development and expansion of the lamina which could be correlated with high levels of protein and chlorophyll. Electrophoretic protein profiles showed a marked developmental pattern.

L9 ANSWER 10 OF 12 HCPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1975:528746 HCPLUS
 DOCUMENT NUMBER: 83:128746
 TITLE: Amino acids in some plants
 AUTHOR(S): Gupta, G. S.; Lal, Niranjan; Sharma, D. P.
 CORPORATE SOURCE: Chem. Dep., Aligarh Muslim Univ., Aligarh, India
 SOURCE: Proc. Natl. Acad. Sci., India, Sect. A (1974), 44, Pt. 2, 140-2
 CODEN: PAIAA3

DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Presence of mainly alanine, leucine, valine asparagine, serine and threonine was indicated in the seeds of *Seseli indicum*. Glycine, valine, asparagine and arginine were found in the drug *Zataria multiflora*. Leaves of *Eugenia jambolana* contained glycine, alanine, leucine and tyrosine. In the case of *Cajanus cajan* leaves glycine, leucine, valine, asparagine, threonine and methionine were identified.

L9 ANSWER 11 OF 12 HCPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1966:53818 HCPLUS
 DOCUMENT NUMBER: 64:53818
 ORIGINAL REFERENCE NO.: 64:10101d-e
 TITLE: Studies on sterility mosaic disease of pigeon pea. II. Carbohydrate metabolism of infected plants
 AUTHOR(S): Narayanasamy, P.; Ramakrishnan, K.
 CORPORATE SOURCE: Agr. Coll. & Res. Inst., Coimbatore
 SOURCE: Proc. Indian Acad. Sci., Sect. B (1965), 62(3), 130-9
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Leaves of *Cajanus cajan* plants infected with sterility mosaic disease show a large redn. in chlorophyll, a lesser redn. in carotene and xanthophyll, and an increase in chlorophyllase activity. Various carbohydrates were detd. at 4 different times during the day. The starch content was lower in the diseased plant leaves, but the amt. of other carbohydrates was either increased or not consistently changed. The sucrose, glucose, and fructose content of leaves, petioles, stems, and buds of healthy and diseased plants was detd. by paper chromatography. Less sucrose and more glucose was translocated in the diseased stems.

L9 ANSWER 12 OF 12 HCPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1964:413025 HCPLUS
 DOCUMENT NUMBER: 61:13025
 ORIGINAL REFERENCE NO.: 61:2196a-b
 TITLE: Presence of fusaric acid in wilt-infected pigeon-pea plants
 AUTHOR(S): Singh, G. P.; Husain, Akhtar
 CORPORATE SOURCE: Govt. Agr. Coll., Cawnpore
 SOURCE: Current Sci. (India) (1964), 33(9), 287
 DOCUMENT TYPE: Journal

LANGUAGE: Unavailable
 AB Fusaric acid was detected by paper chromatography in roots, shoots, and leaves of *Cajanus cajan* infected with *Fusarium lateritium*; it was absent from **healthy** control plants.

FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, JICST-EPLUS, JAPIO' ENTERED AT
 11:20:10 ON 26 JUL 2002
 L10 22 SEA ABB=ON L9
 D L10 IBIB ABS 1-22
 L11 21 DUP REMOVE L10 (1 DUPLICATE REMOVED)

=> d l11 ibib abs 1-21

L11 ANSWER 1 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
 ACCESSION NUMBER: 2002:347133 BIOSIS
 DOCUMENT NUMBER: PREV200200347133
 TITLE: Direct differentiation of shoot buds from **leaf** explants of *Cajanus cajan* L.
 AUTHOR(S): Misra, P. (1)
 CORPORATE SOURCE: (1) Floriculture Section, National Botanical Research Institute, Lucknow, 226 001: pmisra@issinet.com India
 SOURCE: Biologia Plantarum (Prague), (2002) Vol. 45, No. 3, pp. 347-351. print.
 ISSN: 0006-3134.
 DOCUMENT TYPE: Article
 LANGUAGE: English
 AB A protocol was developed for direct differentiation of multiple shoot buds from **leaf** explants of *Cajanus cajan*. In a modified Murashige and Skoog's medium supplemented with 2.22 μ M benzyladenine (BA), 0.57 μ M indole-3-acetic acid (IAA) and 41 μ M adenine sulphate (ADS), the segments of basal halves of the first two leaves of a young seedling incubated on filter paper bridges in liquid medium took 20-25 d to differentiate shoot buds. The explants after transfer to solidified medium, with lower concentration of BA (0.22 μ M) resulted in fast growing **healthy** shoots. The developed shoots (measuring ca. 3 cm) were rooted in a medium supplemented with 1.42 μ M IAA. They were subsequently grown in pots with soil with more than 80% transplantation success.

L11 ANSWER 2 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
 ACCESSION NUMBER: 2002:137301 BIOSIS
 DOCUMENT NUMBER: PREV200200137301
 TITLE: Assessment of preference and intake of browse species by Yankasa sheep at Shika, Nigeria.
 AUTHOR(S): Omokanye, A. T. (1); Balogun, R. O.; Onifade, O. S.; Afolayan, R. A.; Olayemi, M. E.
 CORPORATE SOURCE: (1) Centre for Farming Systems Research, University of Western Sydney, Penrith South, NSW, DC 1797: a.omokanye@uws.edu.au Australia
 SOURCE: Small Ruminant Research, (December, 2001) Vol. 42, No. 3, pp. 203-210. print.
 ISSN: 0921-4488.
 DOCUMENT TYPE: Article
 LANGUAGE: English
 AB Two experiments involving different browse species were carried out during the early dry season in an area of subhumid Nigeria with adult Yankasa sheep. Experiment 1 involved preference studies of nine browse species offered simultaneously in different post-harvest **treatments** (fresh, wilted or dried state). Experiment 2 determined the short-term

intake rate of top four browse species from Experiment 1 offered in two forms (unchopped versus chopped) as either fresh or sun-dried material. In Experiment 1, fresh material was most preferred, followed by wilted and sun-dried material. The overall order of preference of the first four browse species accepted by sheep were: *Cajanus cajan*, *Gmelina arborea*, *Leucaena leucocephala* and *Adenodolichos paniculatus*. Based on mean dietary preference across the three post-harvest treatments, *Khaya senegalensis* and *Gliricidia sepium* were completely rejected by sheep. Experiment 2 mean dry matter (DM) intake rate was highest (34 g DM/kg LW0.75 h-1) for *L. leucocephala* and least (6 g DM/kg LW0.75 h-1) for *A. paniculatus*. Fresh material was consumed more readily than dried (24 versus 10 g DM/kg LW0.75 h-1). Chopping of browse species before offering enhanced intake by around 60%. As the study period progressed, the consumption of fresh and chopped materials remained moderately consistent, while those of dried and unchopped materials in turn increased gradually. Results from Experiment 2 were in agreement with observations from Experiment 1, particularly in terms of order of preference of fresh materials, which matched animals' relative short-term intake.

L11 ANSWER 3 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 2001:242006 BIOSIS

DOCUMENT NUMBER: PREV200100242006

TITLE: Cadmium-induced changes in leaf epidermes, photosynthetic rate and pigment concentrations in *Cajanus cajan*.

AUTHOR(S): Khudsar, T.; Mahmooduzzafar; Iqbal, M. (1)

CORPORATE SOURCE: (1) Department of Botany, Jamia Hamdard, Hamdard Nagar, New Delhi, 110 062: root@hamduni.ren.nic.in India

SOURCE: Biologia Plantarum (Prague), (2001) Vol. 44, No. 1, pp. 59-64. print.

ISSN: 0006-3134.

DOCUMENT TYPE: Article

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Application of different concentrations of cadmium (5, 10, 15, 25 and 50 mug(CdCl₂) g-1(soil d.m.)) markedly affected leaves of *Cajanus cajan* (Linn.) Huth. Due to increased Cd content in leaves, stomatal density and size on abaxial epidermis, and the size of stomatal aperture and length and density of trichomes on both leaf epidermes decreased significantly in the treated plants. Net photosynthetic rate and stomatal conductance were reduced significantly at each concentration of cadmium, whereas reduction in intercellular carbon dioxide concentration was significant at 10 mug Cd onwards. The contents of chlorophyll a, chlorophyll b and carotenoids were relatively low during early stages of plant development under the effect of Cd. Nitrate content, nitrate reductase activity and protein content were also lower in treated plants, compared with control.

L11 ANSWER 4 OF 21 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 2001-080750 [09] WPIDS

DOC. NO. CPI: C2001-023295

TITLE: Extract of *Cajanus cajan* leaf

for preparation of medicaments to treat e.g. ischemic necrosis of caput femoris, osteoporosis, inflammation, and infection.

DERWENT CLASS: B04

INVENTOR(S): YUAN, H

PATENT ASSIGNEE(S): (YUAN-I) YUAN H

COUNTRY COUNT: 95

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2000078324	A1	20001228 (200109)*	ZH	36	
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ					
NL OA PT SD SE SL SZ TZ UG ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM					
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC					
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE					
SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
AU 2000064236	A	20010109 (200122)			
EP 1190716	A1	20020327 (200229)	EN		
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT					
RO SE SI					

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2000078324	A1	WO 2000-CN164	20000619
AU 2000064236	A	AU 2000-64236	20000619
EP 1190716	A1	EP 2000-951187	20000619
		WO 2000-CN164	20000619

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000064236	A Based on	WO 200078324
EP 1190716	A1 Based on	WO 200078324

PRIORITY APPLN. INFO: CN 1999-109886 19990720; CN 1999-109147
19990618

AN 2001-080750 [09] WPIDS

AB WO 200078324 A UPAB: 20010213

NOVELTY - Obtaining a **Cajanus cajan** L. Millsp.

leaf extract by soaking the crude drug in 10-fold water for 0.5-2 hours before decocting 1-4 times for 1-2 hours, is new. The decocting comprises filtration with immediate evaporation at -0.08 MPa and 60 deg. C to a relative density of 1.05-1.15 (at 60 deg. C), filtration through an 80 mesh cloth, continuous centrifugal filtration, and spray-drying to give a powder.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a drug preparation containing **Cajanus cajan** leaf or its extract as active ingredient.

ACTIVITY - Osteopathic; vasotropic; anti-inflammatory; analgesic; immunostimulant; cardiant; cerebroprotective; anti-anginal; vulnerary; anti-infectious.

No biological data is given.

MECHANISM OF ACTION - None given.

USE - For the treatment of osteoporosis and ischemic necrosis of caput femoris, and for improving index of hemorheology. The preparations can also be used as anti-inflammatory and analgesic agents, for enhancement of immune function, and for the treatment of coronary heart disease, angina, bone fracture, cerebral infarction, decubitus, and infectious wound particularly of open fracture (all claimed).

ADVANTAGE - The extract contains natural products which can be applied in formulating medicaments.

Dwg.0/0

L11 ANSWER 5 OF 21 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
 ACCESSION NUMBER: 2000247990 EMBASE
 TITLE: Study on the absorption of Fe, Mn, Mo and Zn by two
 cultivars of pigeonpea (*Cajanus cajan*, Millsp) submitted to
 two doses of fertilizers using INAA.
 AUTHOR: Piasentin R.M.; Armelin M.J.A.; Primavesi O.; Saiki M.
 CORPORATE SOURCE: R.M. Piasentin, Divisao de Radioquimica, Inst. Pesquisas
 Energeticas Nucl., IPEN-CNEN/SP, Caixa Postal 11049, CEP
 05422-970 Sao Paulo-SP, Brazil. rmpiasen@net.ipen.br
 SOURCE: Journal of Radioanalytical and Nuclear Chemistry, (2000)
 244/2 (295-297).
 Refs: 7
 ISSN: 0236-5731 CODEN: JRNCMD
 COUNTRY: Hungary
 DOCUMENT TYPE: Journal; Conference Article
 FILE SEGMENT: 023 Nuclear Medicine
 029 Clinical Biochemistry
 LANGUAGE: English
 SUMMARY LANGUAGE: English
 AB Leaf samples of two varieties of *Cajanus cajan* Millsp were analysed by instrumental neutron activation analysis (INAA). The samples were taken from plants grown under two fertilizer dose conditions, making use of the following microminerals: Fe, Mn, Mo and Zn, which were applied individually to the soil. The samples were collected in two cutting times. We verify the variation in the absorption of each element, considering its availability in the soil.

L11 ANSWER 6 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
 ACCESSION NUMBER: 2000:358859 BIOSIS
 DOCUMENT NUMBER: PREV200000358859
 TITLE: Influence of catalytic supplementation or urea treatment of wheat straw on intake and nutrient utilization by goats.
 AUTHOR(S): Dutta, Narayan (1); Sharma, K. (1); Hasan, Q. Z. (1)
 CORPORATE SOURCE: (1) Division of Animal Nutrition, Indian Veterinary
 Research Institute, Izatnagar, 243 122 India
 SOURCE: Indian Veterinary Medical Journal, (December, 1999) Vol.
 23, No. 4, pp. 265-267. print.
 ISSN: 0250-5266.
 DOCUMENT TYPE: Article
 LANGUAGE: English
 SUMMARY LANGUAGE: English
 AB The potential of wheat bran, *Prosopis cineraria* leaves and Arhar (*Cajanus cajan*) straw as a critical nitrogen supplement (16 g/kgW0.75/d) and urea treatment for improving the utilization of a basal diet of wheat straw (WS) by Barbari male goats was assessed. DMI, g/kgW0.75 by goats receiving *Prosopis cineraria* leaves was significantly higher followed by Arhar, urea treated wheat straw (UTWS) and wheat bran. Digestibility of major nutrients was significantly depressed by including the leguminous Arhar straw or *Prosopis* leaves in the diet. Though the intake (g/kgW0.75) of TDN was comparable by goats amongst different dietary groups, the DCP intake was significantly higher when UTWS was fed. The benefits to be expected by supplementation of WS with wheat bran, *Prosopis* leaves or Arhar straw were lower to those obtained from UTWS.

L11 ANSWER 7 OF 21 WPIDS (C) 2002 THOMSON DERWENT
 ACCESSION NUMBER: 2001-617137 [72] WPIDS
 DOC. NO. CPI: C2001-184859
 TITLE: Use of *cajanus cajan* medicine.

DERWENT CLASS: B04
 INVENTOR(S): YUAN, H
 PATENT ASSIGNEE(S): (YUAN-I) YUAN H
 COUNTRY COUNT: 1
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
CN 1174052	A	19980225	(200172)*		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
CN 1174052	A	CN 1997-108820	19970128

PRIORITY APPLN. INFO: CN 1997-108820 19970128

AN 2001-617137 [72] WPIDS

AB CN 1174052 A UPAB: 20011206

NOVELTY - The present invention discloses the new use of **cajanus cajan leaf** as material for preparing **medicine** for curing ischemic necrosis of thighbone head. The present invention has the functions of preventing microcirculation, promoting blood vessel regeneration, penetrating proliferated sclerotic layer around necrotic thighbone region and entering the center of thighbone to absorb necrotic bone and regenerate new bone, so that it has specific effect to curing necrosis of thighbone head.

Dwg. 0/0

L11 ANSWER 8 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1995:454010 BIOSIS

DOCUMENT NUMBER: PREV199598468310

TITLE: Effects of the application of cement kiln exhausts on leaf biochemistry in certain legume crops.

AUTHOR(S): Saralabai, V. C. (1); Vivekanandan, M.

CORPORATE SOURCE: (1) Dep. Biotechnol., Sch. Life Sci., Bharathidason Univ., Tiruchirapalli-620 024 Tamilnadu India

SOURCE: Photosynthetica (Prague), (1995) Vol. 31, No. 3, pp. 399-409.

ISSN: 0300-3604.

DOCUMENT TYPE: Article

LANGUAGE: English

AB Application of the electrostatic precipitator (ESP) dust to soil and leaves of **Cajanus cajan**, *Vigna mungo*, *Vigna radiata*, *Vigna catjung* and *Glycina max* increased biomass, chloroplast pigments, chemical constituents and enzyme activities of leaves, besides crop productivity evidently indicating that the dust acted as a fertilizer. The net photosynthetic rate, photosystem 2 activity and rate of transpiration were not altered in spite of the dust forming a thin uniform coating over the leaf surface. The contents of intermediary N-compounds like allantoin, allantoic acid and total ureides of the leaves, which might serve as an indirect evidence of symbiotic N₂-fixation, were higher in the **treated** plants. There were increments in free proline, soluble proteins, total nitrogen, nitrates, nitrites, soluble sugars and phenols in the **treated** plants. The concentrations of free amino acids, soluble starch, total sucrose and water soluble SH compounds of the leaves of the control and **treated** plants did not show any significant difference. The activity of superoxide dismutase was significantly higher which possibly

indicated its role in alleviation of H-2O-2 and O-2- toxicity. Enzymes like nitrate reductase, nitrite reductase, glutamine synthetase, acid and alkaline phosphatases, carbonic anhydrase, catalase, glutathione reductase and ascorbate peroxidase also functioned normally. In the **treated** plants, the concentration of ascorbic acid was significantly higher in the roots and nodules indicating the possible role of ascorbic acid in stress alleviation.

L11 ANSWER 9 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
 ACCESSION NUMBER: 1991:482960 BIOSIS
 DOCUMENT NUMBER: BA92:116720
 TITLE: PHOTOSYNTHETIC CARBON FIXATION TRANSLOCATION AND METABOLITE LEVELS IN PIGEONPEA CAJANUS-CAJAN L.
LEAVES EXPOSED TO EXCESS CADMIUM.
 AUTHOR(S): SHEORAN I S; GUPTA V K; LAURA J S; SINGH R
 CORPORATE SOURCE: DEP. CHEM. BIOCHEM., HARYANA AGRIC. UNIV., HISAR 125 004, INDIA.
 SOURCE: INDIAN J EXP BIOL, (1991) 29 (9), 857-861.
 CODEN: IJEBA6. ISSN: 0019-5189.
 FILE SEGMENT: BA; OLD
 LANGUAGE: English
 AB Application of Cd²⁺ to pigeonpea plants through rooting medium at vegetative stage resulted in decreased carbon fixation. Assimilate transport from the leaf increased with the application of 3 mM Cd²⁺ at both the samplings (1 and 4 days after **treatment**). However, higher concentration (6 mM) drastically reduced assimilate transport on day 4 after **treatment**. Level of total soluble carbohydrates and starch was not affected much by Cd²⁺ **treatment**. However, sucrose level was reduced at both the samplings. The reductions in sucrose correlated well with the decreased activity of sucrose phosphate synthase. Little reduction in RuBP-carboxylase and gly-3-phosphate dehydrogenase activities was observed. Level of various metabolites, viz. DHAP, G-6-P, F-6-P and Pi was reduced by Cd²⁺ **treatment** on day 4 after **treatment**. These results indicated that carbon partitioning between starch and sucrose was not affected by Cd²⁺, but sucrose biosynthesis was quite sensitive.

L11 ANSWER 10 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
 ACCESSION NUMBER: 1991:459472 BIOSIS
 DOCUMENT NUMBER: BA92:104252
 TITLE: **LEAF CURL SYNDROME OF PIGEONPEA CAJANUS-CAJAN L. MILLSP. IS A SYSTEMIC RESPONSE TO EFFECTIVE NODULATION BY THE RHIZOBIUM STRAIN IC3342.**
 AUTHOR(S): UPADHYAYA N M; RAO J V D K; DART P J; LETHAM D S
 CORPORATE SOURCE: CSIRO DIV. PLANT INDUSTRY, GPO BOX 1600, CANBERRA ACT 2601, AUST.
 SOURCE: PHYSIOL MOL PLANT PATHOL, (1991) 38 (5), 357-374.
 CODEN: PMPPEZ. ISSN: 0885-5765.
 FILE SEGMENT: BA; OLD
 LANGUAGE: English
 AB Rhizobium strain IC3342 is an unusual bacterium that causes a **leaf curl syndrome** in pigeonpea (**Cajanus cajan** Millsp.) Growth characteristics, plasmid profile, conserved nif and nod gene sequences, and nodulation host range of this strain resemble that of the fast-growing Rhizobium strain ANU240 (NGR234). Leaf curl induction occurred only in hosts effectively nodulated by this strain. A plasmid-cured, non-nodulating derivative failed to induce leaf curl symptoms. The strain IC3342 competed poorly with fast- and slow-growing root-nodule bacteria, but the observed nodule occupancy of 10% was enough to produce leaf curl symptoms. Suppression of nodule development by added

inorganic nitrogen also prevented symptom expression. Approach grafting of a **healthy** pigeonpea plant and a plant with leaf curl symptoms resulted in the development of leaf curl symptoms on the growing shoots of the **healthy** plant within 8 days of graft union. Further symptom expression ceased after graft separation. Feeding xylem sap from the leaf curled plant to a **healthy** plant induced the initial symptom of the syndrome, bending of the growing leaf tip. We conclude that the leaf curl induction is a systemic response for which effective nodulation is an apparent prerequisite.

L11 ANSWER 11 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1991:322912 BIOSIS

DOCUMENT NUMBER: BA92:33427

TITLE: TILIACORININE A NEW SYSTEMIC FUNGICIDE EFFECTIVE AGAINST ALTERNARIA BLIGHT OF PIGEON PEA CAJANUS-CAJAN.

AUTHOR(S): SINGH K P; PANDEY V B; TRIPATHI Y C; SINGH U P

CORPORATE SOURCE: DEP. MYCOL. AND PLANT PATHOL., INST. AGRIC. SCI., BANARAS HINDU UNIV., VARANASI-221005, INDIA.

SOURCE: Z PFLANZENKR PFLANZENSCHUTZ, (1991) 98 (2), 213-219.

CODEN: ZPFPAA. ISSN: 0340-8159.

FILE SEGMENT: BA; OLD

LANGUAGE: English

AB In Indian **medicine**, Tiliacora racemosa is regarded as an antidote to snake bite. Extensive column chromatography and repeated preparative thin-layer chromatography of the crude base fraction of *T. racemosa* (5 kg) resulted in the isolation of tiliacorinine (80 mg) (mp 194-96.degree.C, .alpha.)20D + 310.degree. (Py, c, 2.6) C36H36N2O5 (M+ 576) and nor-tiliacorinine-A (20 mg) (mp 262-68.degree.C) (d), (.alpha.)20D + 268.8.degree. (Py, c, 1.5) C3%H34N2O5 (Mx 562). These compounds were characterized by a detailed study of the spectral data and direct comparison with authentic samples. Tiliacorinine showed promising antifungal activity at 500 .mu.g .cntdot. ml-1 in vitro against germination of conidia of *Alternaria tenuissima*, the causal agent of **leaf blight** of pigeon pea (*Cajanus cajan*).

When the chemical was applied at 750 .mu.g .cntdot. ml-1 to infected pigeon pea plants grown in pots out of doors, the disease was significantly checked. Chemical analysis of pigeon pea plants following spraying with the chemical, and also after feeding it through roots, showed the systemic nature of tiliacorinine. Tiliacorinine is considered to be a promising fungicide for use in the field against *Alternaria* leaf blight of pigeon pea.

L11 ANSWER 12 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1991:317429 BIOSIS

DOCUMENT NUMBER: BA92:27944

TITLE: RECOVERY OF DHAL FROM REDGRAM STORED UNDER DIFFERENT CONDITIONS.

AUTHOR(S): KUMARI U; REDDY N S

CORPORATE SOURCE: DEP. FOODS NUTR., MARATHWADA AGRIC. UNIV., PARBHANI-431 402, INDIA.

SOURCE: J FOOD SCI TECHNOL, (1991) 28 (2), 116-117.

CODEN: JFSTAB. ISSN: 0022-1155.

FILE SEGMENT: BA; OLD

LANGUAGE: English

AB Dhal (dehusked split grains) recovery form redgram (*Cajanus cajan*) grains **treated** with protectants like dried neem leaves, cow dung ash (1.0%) and mustard oil (0.5%) and stored for four months in tin containers and clay pots was studied. The per cent dhal recovery improved in samples **treated** with dried neem leaves and mustard oil and stored for four months in tin containers. Highest recovery was (80.8%) in mustard oil

treated sample and the lowest (68.6%) was in cow dung ash treated sample. Mustard oil and dried neem leaves treated samples were not infested whereas cow dung ash treated samples showed 61.5% damage due to insect infestation. There was a negative correlation at 5% level of significance.

L11 ANSWER 13 OF 21 MEDLINE
 ACCESSION NUMBER: 91219709 MEDLINE
 DOCUMENT NUMBER: 91219709 PubMed ID: 2024054
 TITLE: [Evaluation of traditional **medicine**: effects of *Cajanus cajan* L. and of *Cassia fistula* L. on carbohydrate metabolism in mice].
 Evaluacion de la **medicina** tradicional: efectos de *Cajanus cajan* L. (Guandu) y de *Cassia fistula* L. (canafistula) en el metabolismo de los carbohidratos en el raton.
 AUTHOR: Esposito Avella M; Diaz A; de Gracia I; de Tello R; Gupta M P
 CORPORATE SOURCE: Departamento de Farmacologia, Universidad de Panama.
 SOURCE: REVISTA MEDICA DE PANAMA, (1991 Jan) 16 (1) 39-45.
 Journal code: 7706654. ISSN: 0379-1623.
 PUB. COUNTRY: Panama
 LANGUAGE: Journal; Article; (JOURNAL ARTICLE)
 FILE SEGMENT: Spanish
 ENTRY MONTH: Priority Journals
 199106
 ENTRY DATE: Entered STN: 19910623
 Last Updated on STN: 19910623
 Entered Medline: 19910604

AB The authors report the results of **pharmacologic** evaluation of two **medicinal** plants: *Cajanus cajan* (L.) Millsp and *Cassia fistula*, which are used in Panamanian folk **medicine** for the **treatment** of diabetes. It was found that the aqueous fraction of the **leaves** and stems of *C. cajan* did not produce any hypo blood sugar effect in normoglycemic mice; instead, it produced a hyperglycemia with doses of 500 mg/kg and 1000 mg/kg (p less than 0.001). Only with a dose of 300 mg/kg a short lived decrease in the glycemia was seen at one hour. On the contrary, the folk use of the leaves of *C. fistula* for diabetes seems to have some correlation with the popular frek use. The aqueous fraction produced a significant decrease in the glycemia (p less than 0.001) at 4 and 24 hours with doses of 300 and 500 mg/kg, and at one and four hours after the dose of 1000 mg/kg (p less than 0.001). In the glucose tolerance test, the aqueous fraction of *C. cajan* produced a significant and short lasting decrease (p less than 0.05) with the dose of 300 mg/kg, while the dose of 500 mg/kg did at 0.25, 0.5 and 1 hour (p less than 0.01). The 1000 mg/kg dose produced a significant increase in glucose tolerance at 1 and 2 hours (p less than 0.05). The aqueous fraction of *C. fistula* produced a significant decrease (p less than 0.05) with the dose of 500 mg/kg at 0.25 and 0.5 hours. The 1000 mg/kg dose produced a significant increase (p less than 0.001) at 0.25 and 2 hours. (ABSTRACT TRUNCATED AT 250 WORDS)

L11 ANSWER 14 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE
 1
 ACCESSION NUMBER: 1991:52796 BIOSIS
 DOCUMENT NUMBER: BA91:31077
 TITLE: EFFECTS OF AQUEOUS LEAF EXTRACTS OF CAJANUS-CAJAN ON BLOOD PRESSURE IN RABBITS.
 AUTHOR(S): STEINMETZ M-D; REGLI P; VIAL M; MILLET Y; MOURGUE M

CORPORATE SOURCE: LAB. DE BOTANIQUE ET BIOLOGIE CELLULAIRE, FACULTE DE PHARMACIE, 27 BOULEVARD J. MOULIN, 13385 MARSEILLE CEDEX 5, FRANCE.

SOURCE: FITOTERAPIA, (1990) 61 (4), 317-324.
CODEN: FTRPAE. ISSN: 0367-326X.

FILE SEGMENT: BA; OLD
LANGUAGE: English

AB The effects of aqueous extracts obtained from the **leaves** of **C. cajan** on blood pressure in rabbits were studied and then characterized on intestinal smooth muscle. Aqueous extracts administered either by injections at increasing doses or by infusion at constant concentrations, were responsible for a vasodilatation leading to vasoplegia at high doses. This effect was greater with extracts obtained by hot extraction. Severing of the vague nerves and/or administering of a vasoconstrictor (ephedrine hydrochloride) had no incidence on the fall in blood pressure. With regards to intestinal smooth muscle in vitro extract of **C. cajan** led to a drop in tonus. Several hypotheses are proposed to explain a possible peripheral mechanism of action.

L11 ANSWER 15 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1990:513189 BIOSIS

DOCUMENT NUMBER: BA90:130465

TITLE: VOLUNTARY INTAKE AND DIGESTIBILITY OF NATIVE GRASS AXONOPUS-SPP PASPALUM-SPP SUPPLEMENTED WITH TWO LEVELS OF PIGEON PEA **CAJANUS-CAJAN** L. MILLSP. **LEAVES** IN PELIBUEY WETHERS.

AUTHOR(S): MURRIETA SOTO A; RIVAS CALDERON F

CORPORATE SOURCE: FAC. MED. VET. ZOOTECNIA, UNIV. VERACRUZANA.

SOURCE: VETERINARIA (MEX CITY), (1990) 21 (2), 105-108.
CODEN: VTERBU. ISSN: 0301-5092.

FILE SEGMENT: BA; OLD
LANGUAGE: Spanish

AB Native grass alone was compared against native grass supplemented with 15% and 30% Pigeon Pea (**Cajanus cajan**) for voluntary dry matter intake, dry matter indigestibility, plus nitrogen digestibility. Six Pelibuey wethers were housed in metabolic cages, for a total of 63 days divided in three 21 day periods. Each one had 14 diet adaptation days and 7 days for measuring the amount for food accepted, rejected and faeces produced. The values obtained for dry matter digestibility in native grass alone, native grass supplemented with 15% or 30% Pigeon pea were 47.65, 53.13 and 55.57% respectively. No significative differences ($P > 0.05$) were found among **treatments**. However there was a close correlation between the content of nitrogen in the diet and the dry matter digestibility ($R^2 = 0.96$). Nitrogen digestibility was significantly higher ($P < 0.05$) for native grass supplemented with 30% Pigeon Pea (68.39%), than native grass with 15% Pigeon Pea (68.39%), or native grass alone (35.34%). The relationship between body weight and dry matter consumption (g/kg w 0.75) in native grass alone and native grass supplemented with 15% or 30% Pigeon Pea was 58.0, 58.1, 59.0 and 2.47, 2.48, 2.53% respectively. In both cases there was not a significant difference ($P > 0.05$) between **treatments**. Based on the results of the present study, the supplementation with 30% Pigeon Pea for native grass with low nutritional quality can increase the dry matter digestibility and voluntary intake in Pelibuey wethers.

L11 ANSWER 16 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1989:362175 BIOSIS

DOCUMENT NUMBER: BA88:54289

TITLE: USE OF ISOLATED CELLS AND PROTOPLASTS TO DETECT PHYTOTOXIC ACTIVITY IN CULTURES OF PHYTOPHTHORA-DRECHSLERI-F-SP-

AUTHOR(S): CAJANI.
 SHOGET S; STRANGE R N
 CORPORATE SOURCE: DEP. AGRICULTURAL BOTANY, PLANT SCI. LABORATORIES, UNIV.
 READING, BERKSHIRE RG6 2AS, UK.
 SOURCE: PHYSIOL MOL PLANT PATHOL, (1989) 34 (4), 345-360.
 CODEN: PMPPEZ. ISSN: 0885-5765.

FILE SEGMENT: BA; OLD
 LANGUAGE: English

AB Single cells were isolated from leaves of pigeonpea (*Cajanus cajan*) by a combination of enzymic digestion and mechanical agitation. When incubated with culture filtrates from isolate P3 of *Phytophthora drechsleri* f. sp. *cajani*, rapid cell death occurred, as assessed by the vital stain phenosafranine. This formed the basis of a cell bioassay to quantify the toxicity of crude and partially purified components of culture filtrates. The toxic activity was stabilized by dithiothreitol and 2-mercaptoethanol, but activity was partially lost on treatment with protease or storage at pH values which deviated from neutrality. Boiling completely destroyed toxic activity. A fraction with toxic activity (PPF) was separated from crude material by gel filtration. This fraction eluted at a volume corresponding to an apparent molecular weight of approximately 47 kD. Polyacrylamide gel electrophoresis of PPF revealed three major bands which stained positively for both protein (Coomassie blue) and carbohydrate (periodic acid-Schiff's reagent) with apparent molecular weights of 31, 36 and 48 kD. Protoplasts and cells were equally sensitive to PPF, and plant cuttings immersed in desalinated culture filtrates showed symptoms similar to those of the disease. Growth of cell suspension of pigeonpea was inhibited by the presence of PPF in the culture medium. Protoplasts and cells from eight non-host plant species were significantly less sensitive than pigeonpea to PPF but cells of chickpea were equally sensitive. The results are discussed with respect to the advantages of the cell assay compared to other assays, the nature of PPF compared to other *Phytophthora* toxins and its potential as a selection tool in vitro.

L11 ANSWER 17 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
 ACCESSION NUMBER: 1989:472428 BIOSIS
 DOCUMENT NUMBER: BA88:108188
 TITLE: NITROGEN ACCUMULATION AND PARTITIONING BY THREE GRAIN LEGUMES IN RESPONSE TO SOIL WATER DEFICITS.
 AUTHOR(S): DEVRIES J D; BENNETT J M; BOOTE K J; ALBRECHT S L; MALIRO C E
 CORPORATE SOURCE: AGRONOMY PHYSIOL. LAB., BUILD. NO. 164, UNIV. FLORIDA, GAINESVILLE, FLA. 32611.
 SOURCE: FIELD CROPS RES, (1989) 22 (1), 33-44.
 CODEN: FCREDZ.

FILE SEGMENT: BA; OLD
 LANGUAGE: English

AB Few experiments have been conducted to compare the partitioning and accumulation of nitrogen (N) in plant components of grain legumes grown under different soil water regimes. The objective of this study was to determine the effect of soil water deficit on N accumulation and partitioning in soybean (*Glycine max*. L. Merr.), the pigeon pea (*Cajanus cajan* L.), and peanut (*Arachis hypogaea* L.). In 1984, the three legumes were subjected in a field environment to either well-watered or water-stressed treatment. Nitrogen concentration, total N accumulation, and N partitioning were determined throughout the growing season by measuring N content and concentration in leaves, stems, pod walls, and seeds. Peanut accumulated more total N than either soybean or pigeon pea under both the well-watered and water-stressed treatments. Water stress decreased both N concentration and total

N accumulation, especially in soybean and pigeon pea. Less remobilization of N occurred in soybean leaves and stems during the seed-filling period in the stressed **treatment** because the water stress limited pod addition and subsequent seed demand for N. Loss of N from leaves during seed growth was greater in the crop with the most senescent growth habit (soybean), and lowest in the non-senescent but determinate crop (pigeon pea). Although peanut does not exhibit rapid leaf senescence during seed maturation as does soybean, considerable loss in leaf N was also observed in peanut leaves during the seed-filling period. Soybean, peanut, and pigeon pea differed in accumulation and partitioning of N under water-stressed and non-stressed environments. The partitioning and remobilization of N was dependent on the growth habit of the species and was significantly influenced by soil water deficits.

L11 ANSWER 18 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1988:137875 BIOSIS

DOCUMENT NUMBER: BA85:72702

TITLE: CARBON DIOXIDE AND LIGHT RESPONSES OF PHOTOSYNTHESIS IN COWPEA AND PIGEONPEA DURING WATER DEFICIT AND RECOVERY.

AUTHOR(S): LOPEZ F B; SETTER T L; MCDAVID C R

CORPORATE SOURCE: DEP. AGRONOMY, CORNELL UNIV., ITHACA, NEW YORK 14853.

SOURCE: PLANT PHYSIOL (BETHESDA), (1987) 85 (4), 990-995.

CODEN: PLPHAY. ISSN: 0032-0889.

FILE SEGMENT: BA; OLD

LANGUAGE: English

AB Greenhouse-grown pigeonpea (*Cajanus cajan*, [L.] Millsp.; cultivar UW-10) and cowpea (*Vigna unguiculata*, [L.] Walp.; cultivar California No. 5) were well-watered (control) or subjected to low water potential by withholding water to compare their modes of adaptation to water-limited conditions. Leaf CO₂ exchange rate (CER), leaf diffusive conductance to CO₂ (g_L), and CO₂ concentration in the leaf intercellular air space (Ci) were determined at various CO₂ concentrations and photon flux densities (PFD) of photosynthetically active radiation (400 to 700 nanometer). In cowpea, g_L declined to less than 15% of controls and total water potential (.PSI.w) at midafternoon declined to -0.8 megapascal after 5 days of withholding water, whereas g_L in pigeonpea was about 40% of controls even though midafternoon .PSI.w was -1.9 megapascal. After 8 days of withholding water, .PSI.w at midafternoon declined to -0.9 and -2.4 megapascals in cowpea and pigeonpea, respectively. The solute component of water potential (.PSI.s) decreased substantially less in cowpea than pigeonpea. Photosynthetic CER at saturation photon flux density (PFD) and ambient external CO₂ concentration (360 microliters per liter) on day 5 of withholding decreased by 83 and 55% in cowpea and pigeonpea, respectively. When measured at external, CO₂ concentration in bulk air of 360 microliters per liter, the CER of cowpea had fully recovered to control levels 3 days after rewatering; however, at 970 microliters per liter the PFD-saturated CERs of both species were substantially lower than in controls, indicating residual impairment. In stressed plants of both species the CER responses to Ci from 250 to 600 microliters per liter indicated that a substantial nonstomatal inhibition of CER had occurred. Although the sensitivity of g_L to water limitation in cowpea suggested a dehydration avoidance response, parallel measurements of CER at various Ci and PFD indicated that photosynthetic activity of cowpea mesophyll was substantially inhibited by the water-limited **treatment**.

L11 ANSWER 19 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1986:224335 BIOSIS

DOCUMENT NUMBER: BA81:115635

TITLE: CONTRIBUTION OF OSMOTIC ADJUSTMENT TO THE DEHYDRATION TOLERANCE OF WATER-STRESSED PIGEONPEA *CAJANUS*-

CAJAN CULTIVAR ROYES LEAVES.

AUTHOR(S): FLOWER D J; LUDLOW M M
 CORPORATE SOURCE: DIV. TROPICAL CROPS PASTURES, CSIRO, 306 CARMODY RD., ST LUCIA, QLD 4067, AUST.
 SOURCE: PLANT CELL ENVIRON, (1986) 9 (1), 33-40.
 CODEN: PLCEDV. ISSN: 0140-7791.

FILE SEGMENT: BA; OLD

LANGUAGE: English

AB Water-stressed pigeonpea leaves have high levels of osmotic adjustment at low leaf water potentials. The possible contribution of this adjustment of dehydration tolerance of leaves was examined in plants grown in a controlled environment. Osmotic adjustment was varied by withholding water from plants growing in differing amounts of soil, which resulted in different rates of decline of leaf water potential. The level of osmotic adjustment was inversely related to leaf water potential in all treatments. In addition, at any particular water potential, plants that had experienced a rapid development of stress exhibited less osmotic adjustment than plants that experienced a slower development of stress. Leaves with different levels of osmotic adjustment died at water potentials between -3.4 and -6.3 MPa, [megapascal], but all leaves died at a similar relative water content (32%). Consequently, leaves died when relative water content reached a lethal value, rather than when a lethal leaf water potential was reached. Osmotic adjustment delayed the time and lowered the leaf water potential when the lethal relative water content occurred, because it helped maintain higher relative water contents at low leaf water potentials. The consequences of osmotic adjustment for leaf survival in water-stressed pigeonpea are discussed.

L11 ANSWER 20 OF 21 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.

ACCESSION NUMBER: 83173095 EMBASE

DOCUMENT NUMBER: 1983173095

TITLE: Sucrose: A constitutive elicitor of phytoalexin synthesis.

AUTHOR: Cooksey C.J.; Garratt P.J.; Dahiya J.S.; Strange R.N.

CORPORATE SOURCE: Dep. Chem., Univ. Coll. London, London, WC1 OAJ, United Kingdom

SOURCE: Science, (1983) 220/4604 (1398-1400).

CODEN: SCIEAS

COUNTRY: United States

DOCUMENT TYPE: Journal

FILE SEGMENT: 037 Drug Literature Index

LANGUAGE: English

AB Extracts of seeds and leaves of the tropical legume *Cajanus cajan* (L.) Millsp. (the pigeon pea) elicited the accumulation of three phytoalexins when applied as droplets to superficially wounded leaves of the plant. The active component was purified and identified as sucrose. Phytoalexin accumulation was proportional to the logarithm of the concentration of sucrose applied, with maxima ranging from 338 to 455 micrograms per gram (fresh weight) of leaf tissue. The sucrose concentrations required to elicit half these amounts ranged from 20 to 35 micrograms per milliliter, but other sugars had little effect even at 1000 micrograms per milliliter. The elicitor activity of sucrose was abolished by actimomycin D, puromycin, and cycloheximide at a concentration of 10 micrograms per milliliter or greater, suggesting that gene derepression is required for expression of the phytoalexin response.

L11 ANSWER 21 OF 21 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1983:171372 BIOSIS

DOCUMENT NUMBER: BA75:21372

TITLE: EFFECT OF GIBBERELLIC-ACID AND 2 CHLOROETHYL TRI METHYL

AMMONIUM CHLORIDE ON LEAF DEVELOPMENT OF
PIGEON-PEA CAJANUS-CAJAN.

AUTHOR(S): RAJA RAO P F; MADHAVA RAO K V
CORPORATE SOURCE: DEP. BOTANY, OSMANIA UNIV., HYDERABAD-500 007, A.P.
SOURCE: INDIAN J PLANT PHYSIOL, (1981 (RECD 1982)) 24 (4), 394-400.
CODEN: IPPYA2. ISSN: 0019-5502.

FILE SEGMENT: BA; OLD

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AB The effect of GA and CCC [chlorocholine chloride] on the physiology of the developing 1st leaf of pigeon-pea was studied. GA and the higher concentration (1000 ppm) of CCC reduced the levels of protein synthesis and, consequently, the dry wt. Lower proteinase activity was evident in the GA-treated leaves during early stages of leaf development and expansion of the lamina which could be correlated with high levels of protein and chlorophyll. The disc electrophoretic protein profiles showed a clear-cut developmental pattern changing with the age of the leaf.